

Applied Radiation and Isotopes

Volume 46, 1995

List of Contents and Author Index



PERGAMON

APPLIED RADIATION AND ISOTOPES

EDITORS-IN-CHIEF

W. L. McLAUGHLIN
*Radiation Physics Division,
National Institute of Standards
and Technology, Gaithersburg,
MD 20899, U.S.A.*

D. M. TAYLOR
*University of Wales, College of Cardiff
Department of Chemistry,
P.O. Box 912, Cardiff CF1 3TB,
Wales*

CONSULTING EDITOR EMERITUS

W. B. MANN, 5710 Warwick Place, Chevy Chase, MD 20815, U.S.A.

EDITORS

- P. L. AIREY, *ANSTO, Lucas Heights Research Laboratories, Private Mail Bag 1, Menai, N.S.W. 5097, Australia*
- D. A. BRADLEY, *Asia Lab (Malaysia) Sdn. Bhd., No. 6 Jalan 4/91, Taman Shamelin Perkasa, Cheras, 56100 Kuala Lumpur, Malaysia*
- G. A. BRINKMAN, *NIKHEF-K, P.O. Box 41882, 1009 DB Amsterdam, The Netherlands*
- C. G. CLAYTON, *Sprole House, 125 Knights End Road, March, Cambridgeshire PE15 9QD, England*
- B. M. COURSEY, *Center for Radiation Research, National Institute of Standards and Technology, Gaithersburg, MD 20899, U.S.A.*
- K. DEBERTIN, *Physikalisch-Technische Bundesanstalt, Postfach 3345, D 38023 Braunschweig, Germany*
- W. C. ECKELMAN, *NIH/Clinical Center, Building 10, 1C495, 9000 Rockville Pike, Bethesda, MD 20892, U.S.A.*
- E. A. EVANS, *5 Willow Chase, Hazlemere, High Wycombe, Buckinghamshire HP15 7QP, England*
- T. FLORKOWSKI, *Institute of Physics & Nuclear Techniques, Academy of Mining & Metallurgy, Al. Mickiewicza 30, 30-059 Krakow, Poland*
- F. F. KNAPP, *Health Sciences Research Division, Mail Stop 6229, Building 4501, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831, U.S.A.*
- V. W. PIKE, *PET Methodology Group, Cyclotron Unit, MRC Clinical Sciences Centre, Royal Postgraduate Medical School, Hammersmith Hospital, Ducane Rd, London W12 0NN, England*
- T. TOMINAGA, *Department of Chemistry, Faculty of Science, University of Tokyo, Bunkyo-ku, Tokyo, Japan*
- L. I. WIEBE, *Faculty of Pharmacy and Pharmaceutical Sciences, 3118 Dentistry-Pharmacy Center, University of Alberta, Edmonton, Canada T6G 2N8*
-

Copyright © 1995 Elsevier Science Ltd

Publishing Office

Elsevier Science Ltd, Bampfylde Street, Exeter EX1 2AH, England
(Tel. Exeter (01392) 51558; Fax 425370)
Production Editor: Alison J. Snell

Subscription and Advertising Offices

North America: Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.

Rest of the World: Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England
(Tel. Oxford (01865) 843000; Fax 843010)

Frequency: Published Monthly

Subscription Rates

Annual Institutional Subscription Rates 1996: North, Central and South America, U.S.\$1263.00, Rest of the World £794.00. Associated Personal Subscription Rates are available on request for those whose institutions are library subscribers. Sterling prices exclude VAT. Non-VAT registered customers in the European Community will be charged the appropriate VAT in addition to the price listed. Prices include postage and insurance and are subject to change without notice.

Back Issues

Back issues of all previously published volumes are available direct from Elsevier Science Offices (Oxford and New York). Complete volumes and single issues can be purchased for 1990-1994. Earlier issues are available in high quality photo-duplicated copies as complete volumes only.

Second class postage paid at NEWARK NJ. Postmaster send address corrections to *Applied Radiation and Isotopes*, c/o Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.

CONTENTS OF VOLUME 46

Number 1

Radiochemistry and Radionuclide Applications

- R. Stella, M. T. Ganzerli Valentini and L. Maggi 1 Separation of U(IV) and U(VI) by ion exchange chromatography on lanthanum ammonium oxalate
- Tien-jui Liang and Joseph Yue-cheung Tsai 7 Sorption kinetics of cesium on natural mordenite
- Technical Note*
- E. Taskaev, M. Taskaeva and P. Nikolov 13 Extraction generator for [^{99m}Tc]sodium pertechnetate production

Radiation Sources and Applications

- S. S. Saad, N. Z. Darwish and El-Sharkawy 17 Back-angle anomaly $^{16}\text{O} + ^{28}\text{Si}$ and phenomenological effective surface potential
- S. S. Saad 23 Folding-potential analysis of the elastic ^4He -scattering on ^6Li
- N. V. Kurenkov, V. P. Lunev, V. S. Masterov and Yu. N. Shubin 29 Excitation functions for the formation of the neutron deficient nuclei ^{201}Tl , ^{201}Pb and ^{201}Bi . Calculated and experimental data
- S. K. Sharma, Shyam Kumar, J. S. Yadav and A. P. Sharma 39 Stopping power of heavy ions in solids: a comparative study

Synthesis of Labelled Compounds

- Kavita K. Katti, Prahlad R. Singh, Wynn A. Volkert, Carolyn J. Anderson, M. J. Welch, Timothy Hoffman, Kattesh V. Katti, Alan R. Ketrang and Meifang Wang 53 Synthesis and characterization of a neutral and lipophilic $\text{Ph}_3\text{PN}^{99m}\text{TcO}_3$ complex

Radioactivity and Radiation Measurements

- Baljinder Singh, Devinder Dhawan, Bakhshish Chand, P. C. Mangal and P. N. Trehan 59 Trace element distribution in rat brain following lead and lithium supplementation—a study using an EDXRF spectrometer
- Book Review* 65
- Events* 67

Number 2

Radiochemistry and Radionuclide Applications

- Bradley T. Christian, Robert J. Nickles, Charles K. Stone, Timothy L. Mulnix and John Clark 69 Improving the radionuclidic purity of ^{94m}Tc for PET imaging
- Shuddhodan P. Mishra and Vinod K. Singh 75 Radiotracer technique in adsorption study—XI. Adsorption of barium and strontium ions on hydrous ceric oxide
- Technical Note*
- G. Bormans, W. Langendries, L. Mortelmans and A. Verbruggen 83 On-line anion exchange purification of $^{13}\text{N}[\text{NH}_3]$ produced by 10 MeV proton irradiation of dilute aqueous ethanol

Radiation Sources and Applications

- A. D. Roberts, T. R. Oakes and R. J. Nickles 87 Development of an improved target for $^{18}\text{F}[\text{F}_2]$ production
- H.-J. Lange, T. Hahn, R. Michel, T. Schiek, R. Rösel, U. Herpers, H.-J. Hofmann, B. Dittich-Hannen, M. Suter, W. Wölfl and P. W. Kubik 93 Production of residual nuclei by α -induced reactions on C, N, O, Mg, Al and Si up to 170 MeV
- A. A. Tajuddin, C. S. Chong, A. Shukri, T. Bandyopadhyay and D. A. Bradley 113 Measurement of mass attenuation coefficients of moderate-to-high atomic-number elements at low photon energies

Synthesis of Labelled Compounds

- Ren Iwata, Tatsuo Ido and Masao Tada** 117 Column extraction method for rapid preparation of [^{11}C]acetic and [^{11}C]palmitic acids
- Technical Note*
- N. Psarros and R. Weber** 123 Rapid production of no-carrier-added $^{18}\text{F}^-$ from 2-fluoroaniline via the $^{19}\text{F}(\gamma, n)^{18}\text{F}$ reaction, using a hospital electron linear accelerator

Radioactivity and Radiation Measurements

- A. Grau Carles** 125 New methods for the determination of β -spectra shapefactor coefficients
- S. M. Farid** 129 Passive track detectors for radon determination in the indoor environment
- M. Morales, P. R. Pascholati, V. R. Vanin and O. Helene** 133 Decay of ^{159}Gd
- Technical Note*
- D. Jia, John K. C. Leung and Man-yin W. Tso** 139 On the findings of a radon intercomparison programme
- Book Review* 143
- Events* 145

Number 3**Radiochemistry and Radionuclide Applications**

- Technical Note*
- S. J. Hu, S. Kandaiya and T. S. Lee** 147 Studies of the radioactivity of Amang effluent

Synthesis of Labelled Compounds

- Raman Chirakal, Brian McCarry, Michael Lonergan, Gunter Firnau and Stephen Garnett** 149 Base-mediated decomposition of a mannose triflate during the synthesis of 2-deoxy-2- ^{18}F -fluoro-D-glucose
- T. Nozaki, H. Muraoka, T. Hara and T. Suzuki** 157 Production of fine aerosols labelled with various radionuclides by sublimation from a graphite boat, and their properties and tracer use
- C. Crouzel, F. Hinnen and E. Maitre** 167 Radiosynthesis of methyl and heptyl [^{11}C]isocyanates from [^{11}C]phosgene, application to the synthesis of carbamates: [^{11}C]physostygmine and [^{11}C]heptylphysostygmine
- Technical Notes*
- Peter Gielow and Heinz Hundeshagen** 171 Labelling of β_2 -microglobulin with ^{111}In
- M. S. Berridge, E. H. Cassidy and F. Miraldi** 173 [^{11}C]Acetate and [^{11}C]methionine: improved syntheses and quality control
- S. Gohlke and H. J. Biersack** 177 Simple preparation of L-3-iodo- α -methyl tyrosine suitable for use in kit preparations

Radioactivity and Radiation Measurements

- S. A. Gerasimov** 181 A direct method for separating peak multiplet in x-ray and gamma-ray spectra
- W. B. Mann and M. P. Unterweger** 185 The NBS/NIST Peltier-effect microcalorimeter: a four-decade review
- Makoto Takiue, Haruo Fujii, Tamaru Aburai and Mieko Yanokura** 191 A continuous scintillation counter using a paraffin scintillator and a solid support
- Jean-Louis Genicot, Frank Hardeman and Stephan Oberstedt** 199 The assessment of plutonium and americium in contaminated wounds with high energy resolution semiconductor detectors

Technical Note

S. R. Nilekani, G. R. Narayan, B. Suseela,
R. M. Bhat, B. L. Gupta, Takuji Kojima,
Haruki Takizawa, Hiromi Sunaga and
Ryuichi Tanaka

- 205 Dose intercomparison experiment for gamma rays and 3-MeV electrons by mailing dosimetry using free-radical dosimeters

Events

209

Number 4

Radiochemistry and Radionuclide Applications

Jiunn-Hsing Chao and Chia-Lian Tseng

- 211 Determination of low-level lithium in environmental water samples by neutron activation

Firyal Bou-Rabee

- 217 Estimating the concentration of uranium in some environmental samples in Kuwait after the 1991 Gulf War

H. C. Rocca, A. C. Castagnet and P. E. Aoki

- 221 Determination of leakages in blast furnace cooling plates

Synthesis of Labelled Compounds

Philip H. Elsinga, Erik Keller,
Tjibbe J. de Groot, Gerben M. Visser
and Willem Vaalburg

- 227 Synthesis of [^{11}C]methyl magnesium iodide and its application to the introduction of [^{11}C]-N-*tert*-butyl groups and [^{11}C]-*sec*-alcohols

Raghootama S. Pandurangi,
Robert R. Kuntz and Wynn A. Volkert

- 233 Photolabeling of human serum albumin by 4-azido-2-([^{14}C]-methyl-amino) trifluorobenzonitrile. A high-efficiency, long wavelength photolabel

John R. Finch, William R. Banks,
Dah-Ren Hwang, Martin R. Satter,
Bilal Ezzidene, Joseph C. Mantil
and George A. Digenis

- 241 Synthesis and *in vivo* disposition studies of ^{18}F -labeled HFA-134a

Radioactivity and Radiation Measurements

S. Takács, F. Tárkányi, A. Fessler,
Z. B. Alfassi and S. M. Qaim

- 249 Excitation functions of ^3He -particle induced nuclear reactions on natural Ni with special reference to the monitoring of beam energy and intensity

B. Scholten, Z. Kovács, F. Tárkányi
and S. M. Qaim

- 255 Excitation functions of $^{124}\text{Te}(\text{p}, \text{xn})^{124,123}\text{I}$ reactions from 6 to 31 MeV with special reference to the production of ^{124}I at a small cyclotron

Charles R. Santerre, Jerry L. Campbell,
Peter C. Farina and Lowell A. Muse

- 261 Assessing tritium contamination on three surfaces

Technical Note

I. E. Stamatelatos and S. Yasumura

- 269 Prompt-gamma neutron activation facility for measuring body nitrogen *in vivo* in small animals

Book Reviews

273

Events

277

Number 5

Radiochemistry and Radionuclide Applications

Invited Review

D. S. Popplewell

- 279 Biokinetics and absorption of actinides in human volunteers: a review

Syed Hakimi Sakuma Syed Ahmad

- 287 Competitive adsorption of ^{90}Sr on soil sediments, pure clay phases and feldspar minerals

Pao-Shan Weng and Chien-Li Lin

- 293 Radon concentrations in spa water taken from hot and cold springs in Taiwan

Technical Notes

Nagdy Mohammed Ibrahim, S. Shawky
and H. A. Amer

297 Radioactivity levels in Lake Nasser sediments

J. Jiménez-Becerril and
S. Fernández-Valverde

301 Simple method for rapid determination of ^{235}U in depleted or low enrichment uranium samples

Book Review

305

Radiation Sources and Applications

S. N. Dmitriev, Yu. Ts. Oganessian,
G. Ya. Starodub, S. V. Shishkin,
G. V. Buklanov, Yu. P. Kharitonov,
A. F. Novgorodov, Yu. V. Yushkevich,
D. Newton and R. J. Talbot

307 Ultra-pure ^{236}Pu and ^{237}Pu for environmental and biomedical research

N. V. Vugman, A. M. Rossi
and S. E. J. Rigby

311 EPR dating CO_2^- sites in tooth enamel apatites by ENDOR and triple resonance

Synthesis of Labelled Compounds

Perry S. Kruijer, Tom ter Linden,
Roel Mooij, Frans C. Visser
and Jacobus D. M. Herscheid

317 A practical method for the preparation of $[^{11}\text{C}]$ acetate

Lars Müller, Christer Halldin, Christian Foged
and Rolf Hohlweg

323 Synthesis of $[^{18}\text{F}]\text{NNC}$ 12-0817 and $[^{18}\text{F}]\text{NNC}$ 12-0818; two potential radioligands for the dopamine transporter

Rolf Schwarzbach, Kurt Zimmermann,
Peter Bläuenstein, Alan Smith
and P. August Schubiger

329 Development of a simple and selective separation of ^{67}Cu from irradiated zinc for use in antibody labelling: a comparison of methods

Technical Notes

Perry S. Kruijer and Jacobus D. M. Herscheid

337 A $[^{11}\text{C}]$ carbon dioxide generator

G. Bormans, D. Crombez, L. Mortelmans
and A. Verbruggen

339 A new approach for the shielded housing of automated chemistry modules for the routine production of PET-radiopharmaceuticals

Radioactivity and Radiation Measurements

Thomas M. Semkow

341 Statistical deconvolution of beta spectra: implications for neutrino mass detection

G. S. Randhawa and H. S. Virk

351 Particle identification by measurement of track cone length as a function of the residual range of heavy ions in CR-39 and Lexan polycarbonate

F. A. S. Soliman, A. S. S. Al-Kabbani,
K. A. A. Sharshar and M. S. I. Rageh

355 Characteristics and radiation effects of MOS capacitors with Al_2O_3 layers in p-type silicon

Technical Notes

M. N. Alam, M. I. Chowdhury,
Masud Kamal and Satyajit Ghose

363 Radioactivity in marine fish of the Bay of Bengal

C. Satif and M. A. Misdaq

365 Determination of thorium and uranium contents in geological samples by using solid state nuclear track detectors

M. T. Teli and L. M. Chaudhari

369 Attenuation coefficients of sodium chloride for 662 keV γ -radiation, measured in dilute solutions

Letter to the Editors

Hiroshi Baba

371 Comments on the half-life of ^{237}Pu

Number 6/7

6TH INTERNATIONAL SYMPOSIUM ON
RADIATION PHYSICS—ISRP6

Malcolm Cooper and Mohammed Berrada

ix Preface

Fundamental Processes in Radiation Physics

Invited Papers

- | | | |
|-----------------------------|-----|---|
| M. Toulemonde | 375 | Defect creation by swift heavy ions: material modifications in the electronic stopping power regime |
| J. E. Fernández | 383 | Polarization effects and gamma transport |
| D. Berenyi | 401 | Radiations in ion-atom collisions |
| H. Erramli and G. Blondiaux | 413 | Ion channelling |

Contributed Papers

- | | | |
|---|-----|---|
| Nanak Bhattacharyya, N. Chaudhury and S. C. Roy | 419 | Measurement of total and photoelectric cross sections in the vicinity of absorption edges of heavier atoms |
| A. Kharchaf and L. Erradi | 421 | Application of the multigroup C_N method to the calculation of the albedo of a semi-infinite medium |
| A. Chouak, K. Embarch and M. Berrada | 423 | Measurement of fission yields for $^{232}\text{Th}(n, f)$ at 14.7 MeV by direct gamma spectrometric method |
| A. Hakim, A. Fahli, M. Ohta, G. Guillaume, J. P. Coffin, P. Fintz, F. Jundt, A. Malki, F. Rami, B. Rastegar, P. Wagner and M. Zahar | 425 | Prompt and delayed charged-particle emissions in low impact parameter collision of ^{40}Ar (1100 MeV) and ^{24}Mg |
| A. Jehouani, J. Ghassoun and A. Aboubeker | 427 | The resonance escape probability during the neutron moderation |
| C. David Shaffer and R. H. Pratt | 429 | Use of Yukawa-like parametric potentials in Rayleigh scattering calculations |
| J. Puzović, G. Škoro and I. V. Aničin | 431 | Production of annihilation radiation in iron and lead by cosmic-rays at sea-level |
| L. Lakosi, N. X. Khanh, N. C. Tam, I. Pavlicsek and Á. Pető | 433 | Isomer excitation by high activity ^{137}Cs and ^{60}Co sources and low energy x-rays |
| L. Lakosi, N. X. Khanh, N. C. Tam, J. Sáfár and I. Pavlicsek | 435 | Photoexcitation of isomers by bremsstrahlung of 4 MeV electrons |
| V. Delgado and P. Ortiz | 437 | Energy imparted to a phantom by a low energy x-ray beam: calculation from its narrow beam attenuation curve and comparison with experiments |
| A. Dadi and A. Fahli | 439 | Simulation of absorbed dose and application to image processing |
| Raúl T. Mainardi and Pedro A. Derosa | 441 | Calculations of x-rays polarization from a spherical surface |
| F. Legarda, R. Idoeta and M. Herranz | 443 | The P1 approximation in the transport of beta rays |
| N. B. Avdonina, M. Lamoureux and R. H. Pratt | 445 | Energy losses and spectra for electron bremsstrahlung in a screened atomic potential |
| I. Bikit, M. Krmar, J. Slivka, I. Aničin, M. Vesković and Lj. Čonkić | 447 | Neutrinoless double electron capture of ^{54}Fe |
| A. Hoummada, S. Lazrak Mikou, M. Avenier, G. Bagieu, J. F. Cavaignac and D. Y. Holm Koang | 449 | Neutrino oscillations ILL experiment reanalysis |
| H. Hanine, A. Nourreddine and J. P. Vivien | 451 | Statistical model in nuclear physics population and de-excitation of atomic nuclei at high angular momentum |

S. D. Magalhães, O. D. Gonçalves
and H. Schechter

453 Evaluation of the uncertainty in scattering experiments:
I—averaging cross sections

I. Bikit, M. Krmar, J. Slivka, I. Aničin,
M. Veskovic and Lj. Čonkić

455 Electron-positron conversion decay of ^{64}Zn

Radiation Sources and Detectors

Invited Paper

Hans-Arno Synal

457 Accelerator mass spectrometry: new applications

Contributed Papers

Akira Yamadera, Eunju Kim,
Takamoto Miyata and Takashi Nakamura

467 Development of high sensitivity x- and λ -ray personal dosimeter
using photostimulated luminescent detector

T. Nakamura, N. Tsujimura and T. Yamano

469 Development of real time personal neutron dosimeter with two
silicon detectors

Anita Daříčková, Marcela Vaničková,
Vlastimil Matějčec and Marie Pospíšilová

471 Utilization of optical fibres in dosimetry

J. C. Liu, S. Mao, W. R. Nelson,
K. R. Kase and N. E. Ipe

473 Estimation of the radiation dose to the electronic equipment inside
the PEP-II tunnel

H. Asselman, A. Sekaki, J. Galy, P. Rives,
H. Brunet, A. Birot and J. L. Teyssier

475 Determination of radiative lifetimes of B and C states of XeCl

M. Krčmar, Z. Krečak, A. Ljubičić,
B. A. Logan, D. B. Isabelle and J. Vernois

477 Efficiency of the channel electron multiplier for low energy ^{205}Pb
ions

F. Legarda, R. Idoeta and M. Herranz

479 Gamma spectroscopy with collimated detector including self-
attenuation and collimator edge penetration effects

G. P. Škoro, J. Puzović, A. H. Kukoč,
R. B. Vukanović, M. Župančić, P. R. Adžić
and I. V. Aničin

481 Effective equivalent depth of an underground location by single
detector measurements of cosmic-ray intensity

K. Hakam Oum, M. Lferde and M. Berrada

483 Calibration of a solid state nuclear track detector for the
measurements of radon concentration in air

K. Silander, E. de Lima, M. Fraga,
R. Marques, S. Leite and A. Policarpo

485 x-Ray detection and ageing

T. Cho, M. Hirata, J. Kohagura,
Y. Sakamoto, K. Yatsu, T. Tamano,
T. Kondoh and S. Tanaka

487 Observation of x-ray energy responses of silicon semiconductor
detectors and a new three-dimensional theoretical model for the
signals of multichannel detectors

J. Kohagura, T. Cho, M. Hirata,
K. Yatsu and T. Tamano

489 Verification of a new three-dimensional charge diffusion effect on
the x-ray responses of multichannel semiconductor detector arrays

M. Hirata, T. Cho, J. Kohagura, T. Kondoh,
K. Yatsu and T. Tamano

491 Plasma electron temperature diagnostics using semiconductor x-ray
detector data analysed by a new theory on the x-ray responses

I. Kanno, T. Inbe, S. Kanazawa and I. Kimura

493 Electric field strength and plasma delay in silicon surface barrier
detector

V. Y. Chepel, H. M. Araujo,
M. I. Lopes, R. Ferreira Marques
and A. J. P. L. Policarpo

495 Low temperature test of photomultiplier tubes

R. T. Mainardi and R. A. Barrea

497 Determination of spectral emission of tungsten target tubes
measuring x-ray fluorescence from pure elements

Raúl T. Mainardi and Edgardo V. Bonzi

499 Monte Carlo calculation of radiation energy absorbed in plastic
scintillators

S. M. McDaid, R. Armstrong,
M. J. Cooper and G. Harding

501 Novel x-ray tube for non destructive examination of light materials

G. C. Kiang, L. L. Kiang, W. F. Niu,
P. K. Teng, Y. L. Huang and C. H. Chen

503 A normalization procedure for the four-detector system in γ - γ
angular correlation studies

- | | |
|---|--|
| T. El Bardouni, A. Mouadili
and A. Ait Haddou | 505 Monte Carlo calculations of 14 MeV neutrons characteristics produced in reactor thermal column by an enriched ^6LiD compound |
| H. Igli, J. C. Miellou, A. Chambaudet,
M. Grivet and M. Rebetez | 507 Convection methodology for fission track annealing: direct and inverse numerical simulations in the multi-exponential case |
| H. Ohguchi and T. Nakamura | 509 Development of wide-energy range personal neutron dosimeter using CR-39 track detector |
| D. V. Markovskij, N. A. Belyusenko,
L. A. Trykov, V. L. Romodanov
and D. Yu. Chuvilin | 511 Neutron equipment for radiation physics and thermonuclear investigation: simulation of blanket and radiation shield of thermonuclear units |
| A. S. Tsybin, V. L. Romodanov,
G. G. Voronin, G. I. Primenko
and N. A. Belyusenko | 513 Neutron-physical complex equipment for radiation physics and thermonuclear investigations: (A) low voltage pumped neutron generators with flux up to 10^{13} n/s |
| Gladys Klemic | 515 USDOE's international intercomparisons of environmental dosimeters |
| W. Peter Trower | 517 New wine for old bottles: sodium iodide detector applications better accomplished with $\text{YAlO}_3\text{:Ce}$ scintillators |

Radiation in Fundamental Research

Invited Papers

- | | |
|----------------|--|
| W. I. F. David | 519 Structural studies of ^{60}C using high resolution neutron powder diffraction |
| U. Bergmann | 525 Mössbauer spectroscopy with synchrotron radiation |
| M. Gasparotto | 531 Present status of fusion research: the next-step Tokamak (ITER) and the demonstration reactor (DEMO) |
| René Bimbot | 537 Nuclear physics with radioactive beams |

Contributed Papers

- | | |
|--|--|
| Swapan K. Saha, B. K. Chatterjee
and S. C. Roy | 543 Design of an optimum scattering geometry using surface of revolution |
| Kazuo Shin, Motoyuki Suzuki,
Makoto Okazaki, Ikuji Takagi
and Kouji Yoshida | 545 Depth profile of disorders in silicon induced by O^+ and Si^+ ion bombardments |
| Z. Krečak, M. Krčmar, A. Ljubičić,
B. A. Logan, D. B. Isabelle and J. Vernois | 547 Experimental estimation of the population of the first excited level in ^{205}Pb accompanying α decay of ^{209}Po |
| A. Guessous, N. Schulz, M. Bentaleb,
I. Ahmed, J. L. Durell, S. Khazrouni,
F. Lidén, C. J. Lister, E. Lubkiewicz,
L. R. Morss, K. L. Nash, C. J. Pearson,
W. R. Phillips, J. Shannon, B. J. Varley
and C. W. Williams | 549 Investigation of high-spin states in the neutron-rich ^{106}Mo nucleus |
| O. K. Bouhelal and P. Ribon | 551 Reference tabulation of neutron data by the concept of probability tables |
| L. Gerward and J. Staun Olsen | 553 High-pressure studies of magnetite and magnesioferrite using synchrotron radiation |
| S. C. McGuire, T. Z. Hossain, C. Golkowski,
N. D. Kerness and J. D. Sulcer | 555 Multielement matrix analysis using reactor spectrum neutrons |
| K. Karouani and L. Erradi | 557 Assessment and comparison of different multigroup neutron cross section libraries for dosimetry purposes |
| Turan Ünak and Saim Selvi | 559 Microdosimetry of tritium and carbon-14 in different materials |
| Turan Ünak, Binnur Ongun, Perihan Ünak
and Mehmet N. Kumru | 561 Comparison of the calculated and measured stopping powers of low-energy electrons in different metals |

Radiation in Medicine, Environment, Archeology & Earth Sciences

Invited Papers

- G. Remond, C. Gilles, D. Isabelle, C. Choi, M. Azahra, O. Rouer and F. Cesbron 563 Electron and proton induced x-ray spectrometry: two complementary spatially resolved analytical techniques in mineralogy
- J. Börjesson and S. Mattsson 571 Toxicology; *in vivo* x-ray fluorescence for the assessment of heavy metal concentrations in man
- B. Heaton and J. Lambley 577 TENORM in the oil, gas and mineral mining industry
- M. F. Guerra 583 Elemental analysis of coins and glasses
- H. Brunner 589 Radiation induced mutations for plant selection

Contributed Papers

- L. Musilek, T. Čechák, H. Th. Wolterbeek and P. Kuik 595 Study of environmental contamination in the Czech Republic using radioanalytical methods
- A. Mouadilia, J. Vernois and D. B. Isabelle 597 An original preparation method of xenon-127
- M. V. Kirillov-Ugryumov, V. O. Orlov and A. S. Tsybin 599 An effective method to determine small quantities of gold
- Hakam Oum Keltoum and Lferde Mohammed 601 Measurements of radon activity in indoor air in dwellings and enclosed work areas in Morocco
- Tsuguo Nishikawa, Yoichi Tamagawa, Masayoshi Aoki and Shigeru Okabe 603 Analysis of the time variation of environmental gamma radiation due to the precipitation
- A. Tartari, E. Casnati, J. E. Fernandez, C. Baraldi and M. Gambaccini 605 x-Ray fluorescence analysis of Cd and tissue characterization via scattered radiation evaluation: a feasibility study for *in vivo* applications
- M. A. Gomaa, A. T. Abdel-Fattah, M. W. Essa and R. M. K. El-Shinawy 607 Radioactivity in foodstuffs in Egypt
- W. H. Abulfaraj and A. M. Mamoon 609 Factors affecting radon removal from Rn-222 enriched water
- Ismaili Mohammed, Ibijbjen Jamal and El Abbadi Karima 611 The use of ^{15}N and ^{32}P isotopes in investigations of soil fertility under different cropping systems
- H. Chakkor, M. Ginjaume, A. Sanchez-Reyes and X. Ortega 613 Estimate of the dose delivered to critical organs outside the radiation beams of a Mevatron MX6700 and a Mevatron KDS
- Susumu Amemiya, Toshio Masuda and Liviu Popa-Simil 615 PIXE analysis of atmospheric particulate matter collected at various places
- H. Afif and S. Bouhlassa 617 Evaluation of sedimentation rates by ^{210}Pb , in water bodies of semiarid and arid areas
- S. Bouhlassa and K. Stiki 619 Mobility of some natural and fallout radionuclides in the soil-water interface in a Moroccan watershed
- Y. M. Amin, R. H. Mahat, S. J. Doraisamy and S. Y. Subramaniam 621 The effect of grain size on the radon emanation rate
- A. Sabir, M. Labraimi, M. El Maghraoui and J. C. Abbe 623 Neutron activation analysis of Atlantic Moroccan marine sediments
- A. Shukri, S. Green and D. A. Bradley 625 A feasibility study: *in vivo* x-ray fluorescence of iron using ^{109}Cd
- F. El-Daoushy and R. Garcia-Tenorio 627 Radionuclide time-scales and recent environmental changes
- K. H. Ng, D. A. Bradley and L. M. Looi 629 Treatment of data in the study of elemental concentration of biological materials
- S. M. McDaid, R. Armstrong, M. J. Cooper and G. Harding 631 An improved ratio method for x-ray densitometry
- A. Amara, A. Giovagnoli and J. N. Barrandon 633 Development and optimization of a nuclear method to determine the lead concentration as an ultra-trace element in ultra-pure water

- D. G. van der Merwe, T. L. Nam and R. J. Keddy 635 The performance characteristics of a diamond probe in an electron beam
- M. S. Jahan, J. C. Stovall, J. A. Davidson and G. Hines 637 Long-term effects of gamma-sterilization on degradation of implant materials
- E. V. Gromov, V. M. Gulko, A. V. Izmailov, A. S. Khimchenko, N. F. Kolomlets, L. A. Mart'yanov, B. V. Mikhallenko, V. A. Mikhailov, A. E. Shikanov, K. I. Yakovlev and A. A. Startsev 639 Progress in neutron logging in Russia describing a new portable neutron generator
- H. Boukhal, T. Cherkaoui and M. Lferde 641 Radon variation in soil related to the two earthquakes Md 5.2 and 5.3 occurred in Rachidia Province (Morocco)
- D. C. Creagh and J. Ashton 643 The use of science to solve historical problems
- T. El Khoukhi, M. Fidah and B. Oubelaid 645 Cosmogenic ^7Be in grass of the Maamora site
- S. D. Magalhães, J. Eichler, O. D. Gonçalves and P. Rizzo 647 Scattering of photons and influence in diagnostic radiology
- M. Herranz, C. Elejalde, F. Legarda and F. Romero 649 Distribution of radioactive constituents in river waters
- M. Berrada, A. Choukri and T. El Khoukhi 651 Non destructive and destructive dating by low energy gamma ray spectrometry
- A. Choukri, J.-L. Reyss, J.-C. Plaziat, F. Orszag-Sperber and M. Berrada 653 Reliability of sea level dating using Th/U method for mollusks from the west coast of the Red Sea and from the Atlantic coast of the Moroccan High Atlas
- A. M. Ghose, R. Ravisankar, Mausumi Mitra and G. Muthukrishnan 655 Use of normalised axial distance function in semiempirical calculation of isodose curves for ^{60}Co teletherapy
- A. El Yahyaoui, S. Bouhlassa, L. Brillard, M. Hussonmois and R. Guillaumont 657 Complexes of Cd^{2+} , UO_2^{2+} , and Th^{4+} at radiotracer levels with phosphoric acid
- S. Bouhlassa, A. Azenfar and A. Machrouh 659 Caesium fallout as a tracer of erosion-sedimentation in big catchment
- Turan Ünak, Binnur Ongun and Perihan Ünak 661 Microscopic dose calculations within the cell nucleus from Auger electrons of iodine-125

Radiation in Technology

Invited Papers

- P. M. Racolta 663 Nuclear methods for tribology
- M. W. Johnson 673 The industrial uses of neutrons
- M. Salvatores, A. Zaetta, C. Girard, M. Delpech, I. Slessarev and J. Tommasi 681 Nuclear waste transmutation
- W. B. Gilboy 689 Microtomography with ionising radiations
- A. Birkhofer 701 Advanced power reactors with improved safety characteristics
- A. S. Paschoa and A. Tranjan Filho 707 Radioactive waste management in developing and newly industrialized countries

Contributed Papers

- J. P. Bolívar, R. García-Tenorio and M. García León 717 Fluxes and distribution of natural radionuclides in the production and use of fertilizers
- A. Khalil, F. Membrey, M. Fromm and A. Chambaudet 719 A new method for determining uranium and thorium contents in mineral mining materials
- N. K. Halder, B. K. Chatterjee and S. C. Roy 721 Verification of a model explaining the viscosity divergence of gamma irradiated polymeric liquid
- Y. A. Bykovsky, A. S. Tsybin, K. I. Kozlovsky and A. E. Shikanov 723 Intense ion beams from laser plasma: production and application

- | | | |
|--|-----|--|
| B. Boubeker, J. P. Eymery, Ph. Goudeau
and E. L. H. Sayouty | 725 | Mössbauer spectroscopy and x-ray diffraction study of 304 L stainless steel thin films |
| Nelso Antolotti, Carlotta Baldini,
Fabrizio Fiori, Franco Rustichelli
and Bin Yang | 727 | Characterization and quality assurance procedures for ceramic coatings |
| G. Albertini, F. Carsughi, M. Ceretti,
R. Coppola, F. Fiori, A. Möslang
and F. Rustichelli | 729 | Small angle neutron scattering (SANS) investigation of irradiated MANET steel |
| G. Albertini, F. M. Cernuschi, G. Cicognani,
S. Ghia, T. Lorentzen and F. Rustichelli | 731 | Residual strain measurements in welded steel Fe510D |
| Abdel Megid Mamoon | 733 | Thermoluminescence of irradiated milk powders |

Number 8

Radiochemistry and Radionuclide Applications

- | | | |
|---|-----|---|
| H. A. Ashry, A. E. Khazbak,
F. A. S. Soliman and M. A. Ibrahim | 735 | Determination of uranium and thorium content in the various stages of monazite upgrading |
| C. M. Bartle | 741 | Features of the measurement of fat in meat using the neutron/gamma transmission (NEUGAT) method |

Radiation Sources and Applications

- | | | |
|---|-----|--|
| H.-J. Helmeke and H. Hundeshagen | 751 | Design of gas targets for the production of medically used radionuclides with the help of Monte-Carlo simulation of small angle multiple scattering of charged particles |
| Suzanne V. Smith, Nadine Di Bartolo,
Saed Mirzadeh, Richard M. Lambrecht,
F. F. (Russ) Knapp Jr and
Eric L. Hetherington | 759 | [¹⁶⁶ Dy] dysprosium/[¹⁶⁶ Ho] holmium <i>in vivo</i> generator |

Synthesis of Labelled Compounds

- | | | |
|--|-----|--|
| Alan A. Wilson, Jean N. DaSilva
and Sylvain Houle | 765 | Synthesis of two radiofluorinated cocaine analogues using distilled 2-[¹⁸ F]fluoroethyl bromide |
| M. Ögren, K. Hörnfeldt, K. J. Fasth and
B. Långström | 771 | ¹¹ C-labelled polymer-bound Wittig reagents in the synthesis of ¹¹ C-labelled aromatic alkenes |
| Irina Ekaeva, Louisa Barre,
Marie-Claire Lasne and Fabienne Gourand | 777 | 2- and 4-[¹⁸ F]fluorophenols from Baeyer-Villiger oxidation of [¹⁸ F]fluorophenylketones and [¹⁸ F]fluorobenzaldehydes |
| M. J. Farquharson, N. M. Spyrou,
J. Al-Bahri and D. J. Highgate | 783 | Low energy photon attenuation measurements of hydrophilic materials for tissue equivalent phantoms |

Radioactivity and Radiation Measurements

- | | | |
|--|-----|---|
| Alfian Noor, Nurlina Kasim
and M. F. L'Annunziata | 791 | Application of pulse height spectral analysis to double-label counting of ³⁵ S- ³² P |
| A. Grau Carles and A. Grau Malonda | 799 | Radionuclide standardization by Cherenkov counting |
| Peter Filß | 805 | Relation between the activity of a high-density waste drum and its gamma count rate measured with an unshielded Ge-detector |
| F. Ureña-Núñez, J. Flores M.,
M. P. Zuazua, D. A. Secker,
J. J. Coogan and L. A. Rosocha | 813 | Use of alanine-silicone pellets for electron dosimetry. Determination of a three-dimensional dose profile of an irradiation chamber |
| Toshiyuki Nakajima | 819 | ESR of sugar as a personnel monitor for radiation emergencies |
| Francisco Americo Marcelino Silveira and
Oswaldo Baffa | 827 | Thermoluminescence and ESR measurements on alanine and sucrose dosimeters |
| Events | 831 | |

Number 9

Radiochemistry and Radionuclide Applications

- Manuel C. Lagunas-Solar and Omar F. Carvacho 833 Cyclotron production of PET radionuclides: no-carrier-added fluorine-18 with high-energy protons on natural neon gas targets
- Dai-Chin Liu, Chun-Nan Hsu and Chi-Lung Chuang 839 Ion-exchange and sorption kinetics of cesium and strontium in soils
- Shuddhodan P. Mishra and Vinod K. Singh 847 Radiotracer technique in adsorption study—XIII. Adsorption of barium and strontium ions on chromium(IV) oxide powder
- Sauli Savolainen, Jyrki Räisänen, Veli Eteläniemi, Usama Abo Ramadan and Merja Kallio 855 Analysis of ^{10}B by PIGE with factor analytical γ -ray peak identification
- Hans Lundqvist, Vladimir Tolmachev, Alexander Bruskin, Lars Einarsson and Petter Malmberg 859 Rapid separation of ^{110}In from enriched Cd targets by thermal diffusion

Radiation Sources and Applications

- H. Siegert 865 New determination of the half-life of ^{121}Te
- Hsiang-En Wang, Shan-Wen Lin, Pao-Shan Weng and Pin-Chieh Hsu 869 A study of the main glow peak for $\text{CaF}_2:\text{Mn}$
- Vijay Kumar, Rama Rani, Kawaldeep and K. Singh 875 Study of some nuclear parameters in the decay of ^{131}Ba

Synthesis of Labelled Compounds

- Paul A. Culbert, Michael J. Adam and Salma Jivan 883 Facile synthesis of N-trifluoroacetyl-3,4-dimethoxy-6-trimethylstannylphenethylamine: a convenient precursor to 6- ^{18}F fluorodopamine
- P. A. Culbert, M. J. Adam, E. T. Hurtado, J. M. A. Huser, S. Jivan, J. Lu, T. J. Ruth and S. K. Zeisler 887 Automated synthesis of ^{18}F FDG using tetrabutylammonium bicarbonate
- Frédéric Schmitz, Alain Plenevaux, Guy Del-Fiore, Christian Lemaire, Dominique Comar and André Luxen 893 Fast routine production of L- ^{11}C -methylmethionine with $\text{Al}_2\text{O}_3/\text{KF}$
- Ren Iwata, Tatsuo Ido and Masao Tada 899 On-column preparation of 1-aminocyclopentane-1- ^{11}C carboxylic acid
- Kiichi Ishiwata, Kenji Ishii, Shin-Ichi Ishii and Michio Senda 907 Synthesis of 5-HT $_3$ receptor antagonists, ^{11}C Y-25130 and ^{11}C YM060
- Kurt Hamacher and Wilhelm Hamkens 911 Remote controlled one-step production of ^{18}F labeled butyrophenone neuroleptics exemplified by the synthesis of n.c.a. ^{18}F N-methylspiperone
- C. Krummeich and M. Holschbach 917 Kit preparation of n.c.a. 3- ^{123}I iodo-L- α -methyltyrosine ^{123}I IMT, 3- ^{123}I iodo-O-methyl-L-tyrosine ^{123}I OMIT and 3- ^{123}I iodo-O-methyl-L- α -methyltyrosine ^{123}I OMIMT using Sep-PakTM C-18 cartridges
- M. R. A. Pillai, K. Kothari and S. Jurisson 923 Pentadentate chiral amine-phenol ligands: synthesis and radiochemical studies with $^{99\text{m}}\text{Tc}$

Radioactivity and Radiation Measurements

- J. M. Los Arcos and L. Rodríguez Barquero 929 LSC background prediction using three-dimensional modelling
- Tien-Ko Wang, Wei-Yang Mar, Tzung-Hua Ying, Chi-Hung Liao and Chia-Lian Tseng 933 HPGe detector absolute-peak-efficiency calibration by using the ESOLAN program
- Mauro S. Dias and Marina F. Koskinas 945 Accidental summing correction in ^{125}I activity determination by the Sum-Peak method
- Ludwik Loska 949 A computer method of γ -ray spectra stabilization

G. Blessing, W. Bräutigam, H. G. Böge, N. Gad, B. Scholten and S. M. Qaim	955	Internal irradiation system for excitation function measurement via the stacked-foil technique
Begoña Quintana and Francisco Fernandez	961	An empirical method to determine coincidence-summing corrections in gamma spectrometry
Jiri Kvasnicka	965	Beta radiation dose above a uranium-mine contaminated water disposal area
Events	973	

Number 10

Radiochemistry and Radionuclide Applications

E. Vigorito, A. Robles, H. Balter, A. Nappa and F. Goñi	975	[¹²⁵ I]IgM (KAU) human monoclonal cold agglutinin: labelling and studies on its biological activity
V. S. Subrahmanyam and P. Sen	981	Helium implanted vanadium studied by the positron annihilation technique
M. C. Cantone, D. de Bartolo, A. Giussani, A. Ottolenghi, F. Nüsslin, Ch. Hansen, P. Roth and E. Werner	987	Influence of the administered mass of tellurium on plasma clearance in rabbits
Shoichi Fuma and Yoshikazu Inoue	991	Simplified and sensitive analysis of organically bound tritium in tree rings to retrospect environmental tritium levels
Technical Note		
Y. Satoh, K. Fukuda, J. Ohkuma, T. Asano, R. Taniguchi and M. Fujishiro	999	Multielement photon activation analysis of a bulk lanthanum sample by a Ge-BGO compton-suppression spectrometer

Radiation Sources and Applications

P. Hayumbu, N. Haselberger, A. Markowicz and V. Valkovic	1003	Analysis of rock phosphates by x-ray fluorescence spectrometry
Technical Note		
M. S. Mansur, A. Mushtaq and Ali Muhammad	1007	A ¹⁰⁹ Pd → ^{109m} Ag generator

Synthesis of Labelled Compounds

Kiichi Ishiwata, Riko Furuta, Jun-Ichi Shimada, Shin-Ichi Ishii, Kazutoyo Endo, Fumio Suzuki and Michio Senda	1009	Synthesis and preliminary evaluation of [¹¹ C]KF15372, a selective adenosine A ₁ antagonist
S. N. Muddukrishna, Alex Chen, Pei Qi and Mark A. Smolenski	1015	Quantitation of reduced disulfide groups in monoclonal antibodies using 5-iodoacetamidofluorescein: a novel size exclusion-HPLC technique
Jörgen Bergman, Peter Johnström, Merja Haaparanta, Olof Solin, Tim Duelfer and Sharon Stone-Elander	1027	Radiolabelling of 2-oxoquazepam with electrophilic ¹⁸ F prepared from [¹⁸ F]fluoride
Technical Notes		
Kiichi Ishiwata, Shin-Ichi Ishii and Michio Senda	1035	Successive preparation of ¹¹ C labeled sodium acetate and/or sodium hexanoate
Catherine F. Foulon, Ying Z. Zhang, S. James Adelstein and Amin I. Kassir	1039	Instantaneous preparation of radiolabeled 5-iodo-2'-deoxyuridine

Radioactivity and Radiation Measurements

W. Stachowicz, J. Michalik, G. Burlinska, J. Sadlo, A. Dziedzic-Gocławska and K. Ostrowski	1047	Detection limits of absorbed dose of ionizing radiation in molluscan shells as determined by e.p.r. spectroscopy
A. Baeza, L. M. del Rio, A. Jimenez, C. Miro and J. M. Paniagua	1053	Factors determining the radioactivity levels of waters in the province of Cáceres (Spain)

C. J. McKinney, B. W. Wieland and R. E. Coleman	1061	Radiation-hard non-contact fluid sensor for radionuclide production applications
P. Martin, G. J. Hancock, S. Paulka and R. A. Akber	1065	Determination of ^{227}Ac by α -particle spectrometry
Hasan M. Khan and Henry Delincée	1071	Detection of radiation treatment of spices and herbs of Asian origin using thermoluminescence of mineral contaminants
G. A. Klevezal, V. A. Serezhnikov and V. N. Kalyakin	1077	Radiation dose accumulated by reindeer from Novaya Zemlya
<i>Technical Note</i>		
Pao-Shan Weng, Pin-Chieh Hsu and Yu-Hsien Chen	1081	The response of the thermoluminescent dosimeter $\text{CaF}_2:\text{Tm}$ to protons
<i>Book Review</i>	1085	
<i>Events</i>	1087	

Number 11

Akira Kudo and Dallas C. Santry	v	Foreword: <i>Proceedings of Plutonium in the Environment</i> , 6–8 July 1994, Ottawa, Canada
---------------------------------	---	--

Case Studies

A. Kudo, Y. Mahara, D. C. Santry, T. Suzuki, S. Miyahara, M. Sugahara, J. Zheng and J-P. Garrec	1089	Plutonium mass balance released from the Nagasaki A-bomb and the applicability for future environmental research
P. A. Burns, M. B. Cooper, K. H. Lokan, M. J. Wilks and G. A. Williams	1099	Characteristics of plutonium and americium contamination at the former U.K. atomic weapons test ranges at Maralinga and Emu
M. Baskaran, Shaunna Asbill, Peter Santschi, Tamara Davis, James Brooks, Mike Champ, Vyacheslav Makeyev and Vladimir Khlebovich	1109	Distribution of $^{239,240}\text{Pu}$ and ^{238}Pu concentrations in sediments from the Ob and Yenisey Rivers and the Kara Sea
P. J. Kershaw, D. S. Woodhead, M. B. Lovett and K. S. Leonard	1121	Plutonium from European reprocessing operations—its behaviour in the marine environment

Analysis and Measurements

G. Bortels, C. Hurtgen and D. Santry	1135	Nuclide analysis on low-statistics alpha-particle spectra: an experimental verification for Pu isotopes
S. M. Jerome, D. Smith, M. J. Woods and S. A. Woods	1145	Metrology of plutonium for environmental measurements
D. Arnold and W. Kolb	1151	Determination of plutonium content and isotopic ratios in environmental samples by L x-ray and α -particle measurements
E. L. Cooper, M. K. Haas and J. F. Mattie	1159	Studies of the speciation of plutonium and other actinides in natural groundwater using anion exchange resin
P. I. Mitchell, J. Vives i Batlle, A. B. Downes, O. M. Condren, L. León Vintó and J. A. Sánchez-Cabeza	1175	Recent observations on the physico-chemical speciation of plutonium in the Irish Sea and the western Mediterranean

Geosphere and Atmosphere

Yasunori Mahara and Akira Kudo	1191	Plutonium released by the Nagasaki A-bomb: mobility in the environment
Jerzy W. Mietelski and Bogdan Was	1203	Plutonium from Chernobyl in Poland

Hydrosphere

M. S. Baxter, S. W. Fowler and P. P. Povinec	1213	Observations on plutonium in the oceans
--	------	---

E. Holm

1225 Plutonium in the Baltic Sea

S. R. Joshi

1231 Plutonium in Lake Ontario

R. J. Cornett, T. Eve,
A. E. Docherty and E. L. Cooper

1239 Plutonium in freshwaters: sources and behaviour in the Ottawa River Basin

Biosphere

David M. Taylor

1245 Environmental plutonium in humans

B. Franke, R. Schupfner, H. Schüttelkopf
and D. H. R. Spennemann

1253 Transuranics in bone of deceased former residents of Rongelap Atoll, Marshall Islands

L. C. Sun, A. R. Moorthy, E. Kaplan,
J. W. Baum and C. B. Meinhold

1259 Assessment of plutonium exposures in Rongelap and Utirik populations by fission track analysis of urine

J.-P. Garrec, T. Suzuki, Y. Mahara,
D. C. Santry, S. Miyahara,
M. Sugahara, J. Zheng and A. Kudo

1271 Plutonium in tree rings from France and Japan

History, Present and Future Research

R. J. Pentreath

1279 The analysis of Pu in environmental samples: a brief historical perspective

E. L. Cooper

1287 Symposium summary

Future Research

1291

Number 12

David M. Taylor

iii Editorial

Radiochemistry and Radionuclide ApplicationsM. Czauderna, S. Sierakowska and
B. Sitowska

1295 Use of INAA to study Se, Sb, Zn and Co levels of yeast cells

T. Nozaki and J. Saito

1299 Isotopic double tracers for the measurement of the biological half-life of an element or compound, exemplified by ^{125}I – ^{131}I taken up in a seaweedKaijun Lin, William J. Cooper,
Michael G. Nickelsen, Charles N. Kurucz
and Thomas D. Waite

1307 Decomposition of aqueous solutions of phenol using high energy electron beam irradiation—a large scale study

Radiation Sources and Applications

Omar Chibani

1317 Electron dose distributions from point sources in water, aluminium, iron and lead

Bhaskar Mukherjee and Anthony Barber

1333 Development of a simple neutron irradiation facility utilizing the stray neutron field of a medical cyclotron

F. A. S. Soliman, A. S. S. Al-Kabbani,
M. S. I. Rageh and K. A. A. Sharshar1337 Effects of electron-hole generation, transport and trapping in MOSFETs due to γ -ray exposureS. K. Sharma, Shyam Kumar and
A. P. Sharma

1345 Range of heavy ions in solids: a comparative study

Radioactivity and Radiation MeasurementsF. Bellemans, F. De Corte and
P. Van den haute

1351 Corning CN glasses for the evaluation of the neutron spectrum in fission track dating

D. Nichiporov, V. Kostjuchenko, J. M. Puhl,
D. L. Bensen, M. F. Desrosiers, C. E. Dick,
W. L. McLaughlin, T. Kojima,
B. M. Coursey and S. Zink

1355 Investigation of applicability of alanine and radiochromic detectors to dosimetry of proton clinical beams

Toshiyuki Nakajima, Takayoshi Kamiyama, Yoshiyuki Fujii, Hideaki Motoyama and Shuuichi Esumi	1363	Ice-based altitude distribution of natural radiation annual exposure rate in the Antarctica zone over the latitude range 69°S–77°S using a pair-filter thermoluminescence method
Shan-Wen Lin and Pao-Shan Weng	1369	Kinetic parameter analysis for the dosimetric peaks of $\text{CaF}_2\text{:Tm}$ (TLD-300) irradiated with protons and γ -radiations
F. M. Nortier, S. J. Mills and G. F. Steyn	1377	Excitation functions for the production of some radioisotopes of Cs, Xe and I in proton bombardment of ^{nat}Xe up to 100 MeV
Alberto Malanca, Valerio Pessina, Giuseppe Dallara, Cynthia Newby Luce and Laura Gaidolfi	1387	Natural radioactivity in building materials from the Brazilian state of Espírito Santo
A. El-Hussein and A. A. Ahmed	1393	Unattached fraction and size distribution of aerosol-attached radon progeny in the open air
M. S. El-Tahawy and R. H. Higgy	1401	Natural radioactivity in different types of bricks fabricated and used in the Cairo region
T. Kojima, S. Kashiwazaki, H. Tachibana, R. Tanaka, M. F. Desrosiers and W. L. McLaughlin	1407	Orientation effects on ESR analysis of alanine-polymer dosimeters
A. Fenyvesi, F. Tárkányi, F. Szelecsényi, S. Takács, Z. Szücs, T. Molnár and S. Sudár	1413	Excitation function and thick target yield of the $^{40}\text{Ar}(\alpha, p)^{43}\text{K}$ reaction: production of ^{43}K
Events	1421	

